

## **Application of Nature-Based Technologies in a Textile Industry to Treat and Reuse the Wastewater**

Fatima Muzamil<sup>1</sup>, Muhammad Mateen<sup>1</sup>, Maryam Noor<sup>1</sup>, Muhammad Afzal<sup>\*1</sup>

<sup>1</sup> *National Institute for Biotechnology and Genetic Engineering College, Pakistan Institute of Engineering and Applied Sciences (NIBGE-C, PIEAS), Faisalabad, Punjab, 38000, Pakistan*

*\*Email: manibge@yahoo.com; afzal@nibge.org*

Textile industry wastewater is highly polluted, and its untreated discharge into the environment causes water contamination. Conventional wastewater treatment methods are often expensive and resource-intensive, making them impractical for widespread implementation. To address this, sustainable and low-cost wastewater treatment technologies offer a viable solution to improve water quality while ensuring affordability and environmental sustainability. Different nature-based technologies, such as anaerobic digester (AD), floating treatment wetlands (FTWs), constructed wetlands (CWs) and sand filtration (SF) are being used to treat sewage and industrial wastewater. The purpose of this study was to combine AD, FTWs, CWs, and SF to develop a bioreactor in a textile industry for the treatment of wastewater. Treated wastewater meet National wastewater discharge standards, and is being used in horticulture and/safe discharge is the environment. This is the first example in the Pakistan to apply Nature-Based Technologies in an industry to treat and reuse the wastewater. The technology removing (more than 90%) both organic and inorganic pollutants from the wastewater. Now the treated water is also non-toxic. The water is being reuse in horticulture, and /or safely discharge in the environment.

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